



Xenopholis werdingorum, Jansen, Álvarez & Köhler, 2009 (Squamata: Dipsadidae): range extension with comments on distribution

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Abstract: We present a significant range extension of *Xenopholis werdingorum* from Bolivia. There is a dearth of information on this recently described species, and this account significantly contributes to knowledge of its geographic range.

Key words: Beni; Totaizal; Bolivia; primary rainforest; Neotropics

The genus *Xenopholis* Peters, 1869 is a group of relatively small (300–450 mm) Neotropical cryptozoic snakes (Cunha and Nascimento 1978; Martins and Oliveira 1998; Jansen et al. 2009; Costa et al. 2013). *Xenopholis* is a small taxon consisting of three species; *X. scalaris* (Wucherer, 1861), *X. undulatus* (Jenson, 1900), and *X. werdingorum* Jansen, Álvarez & Köhler, 2009 (Uetz and Hošek 2016) distributed across French Guiana, Brazil, Bolivia, Peru, Columbia, Ecuador, and Paraguay (Hoge and Federsoni 1975; Jansen et al. 2009; Loebmann 2009; Ribeiro et al. 2011; Hamdan, et al. 2015). A morphological character unique to the genus is their distinctive vertebrae which have broadened and bifurcated neural spines (Boulenger 1896; Cunha and Nascimento 1978). Boulenger (1896: 231; Fig. 1) presented detailed drawings of the vertebrae and Jansen et al. (2009: 38; Fig. 7) provided radiographic images. Additionally, the genus and species have a remarkable history of taxonomic confusion and difficulties of identification: for an in depth history and analysis see Jansen et al. (2009).

The most recent addition to the genus, *X. werdingorum*, was described from three female specimens collected in the Department of Santa Cruz, Bolivia. Since the

description of this species (Jansen et al. 2009), there have been an additional three specimens collected near the border of the departments of Santa Cruz and Beni, which were deposited in Museo Noel Kempff Mercado (MNK). Marques et al. (2005: 73) cited *Xenopholis* sp. from "Fazenda Cabaceiras, Poconé, Mato Grosso", while Marques et al. (2015, p. 89) cited *X. werdingorum* from "UHE Luís Eduardo Magalhães, Palmas, Tocantins". Moreover, due to the novelty of *X. werdingorum*, there is a paucity of information in the scientific literature regarding the distribution, life history, and general ecology of this species. Herein, we describe an additional specimen of *X. werdingorum* from Beni, Bolivia that represents a considerable range extension.

The specimen (CIRA- 299; Figure 1) was collected on 26 June 2015, at 23:40 h, during a herpetofaunal survey of the Reserva de la Biósfera Estación Biológica del Beni and surrounding area (Departamento del Beni, Provincia de Yacuma). This individual was found alive under a palm frond in primary rainforest 0.8 km northeast of the indigenous community of Totaizal (14.87693° S, 066.32169° W, datum WGS84; Figure 2). The specimen was collected and deposited in the herpetology collection of Centro de Investigación de Recursos Acuáticos.

Scale counts and scutellation follow Dowling (1951) and Peters (1964). Measurements were taken using a flexible ruler to the nearest millimeter. Sex was determined by the probe method following (McDiarmid et al. 2012).

Identification of the specimen was determined by meristic data, coloration and photographs (from the original description), as well as morphometric



Figure 1. *Xenopholis werdingorum* (CIRA-299) collected during a herpetofaunal survey of the Reserva de la Biósfera Estación Biológica del Beni and surrounding area (Departamento del Beni, Provincia de Yacuma). **A.** Dorsal view. **B.** Ventral view. **C.** Live specimen.

comparison provided by Jansen et al. (2009). Identity was also confirmed by Dr. Martin Jansen, Senckenberg Research Institute and Natural History Museum, Frankfurt, Germany.

The coloration and pattern of the specimen is in accord with the original description by Jansen et al. (2009). Meristic data was also congruent, with the exception of the ventral scale count which was slightly lower than the original species account. The specimen (CIRA- 299; Figure 1) presented the following characters and meristic data: female; total length 39.2 cm; SVL 33.8 cm; tail length 5.4 cm; weight 15.25 g.; dorsal scales smooth; dorsal scale rows 19/19/17; prefrontals 2; preoculars 1; postoculars 2; supralabials 8, 4th and 5th

in contact with orbit; infralabials 9, 1st to 5th in contact with anterior and posterior chinshields; temporals 1+2; loreal 1; genials 2 pairs; ventrals 165; subcaudals 39; anal scale undivided.

This record of *X. werdingorum* represents the northwest boundary of this species' known distribution (Figure 2). This extends the range of *X. werdingorum* 265 km west from the location of the nearest reported specimens. It is likely that the species is distributed throughout Bolivia and possibly neighboring countries in South America. Clearly more specimens are needed for comparison, to delimit geographic range, and to develop a greater understanding of the natural history of this handsome, enigmatic species.

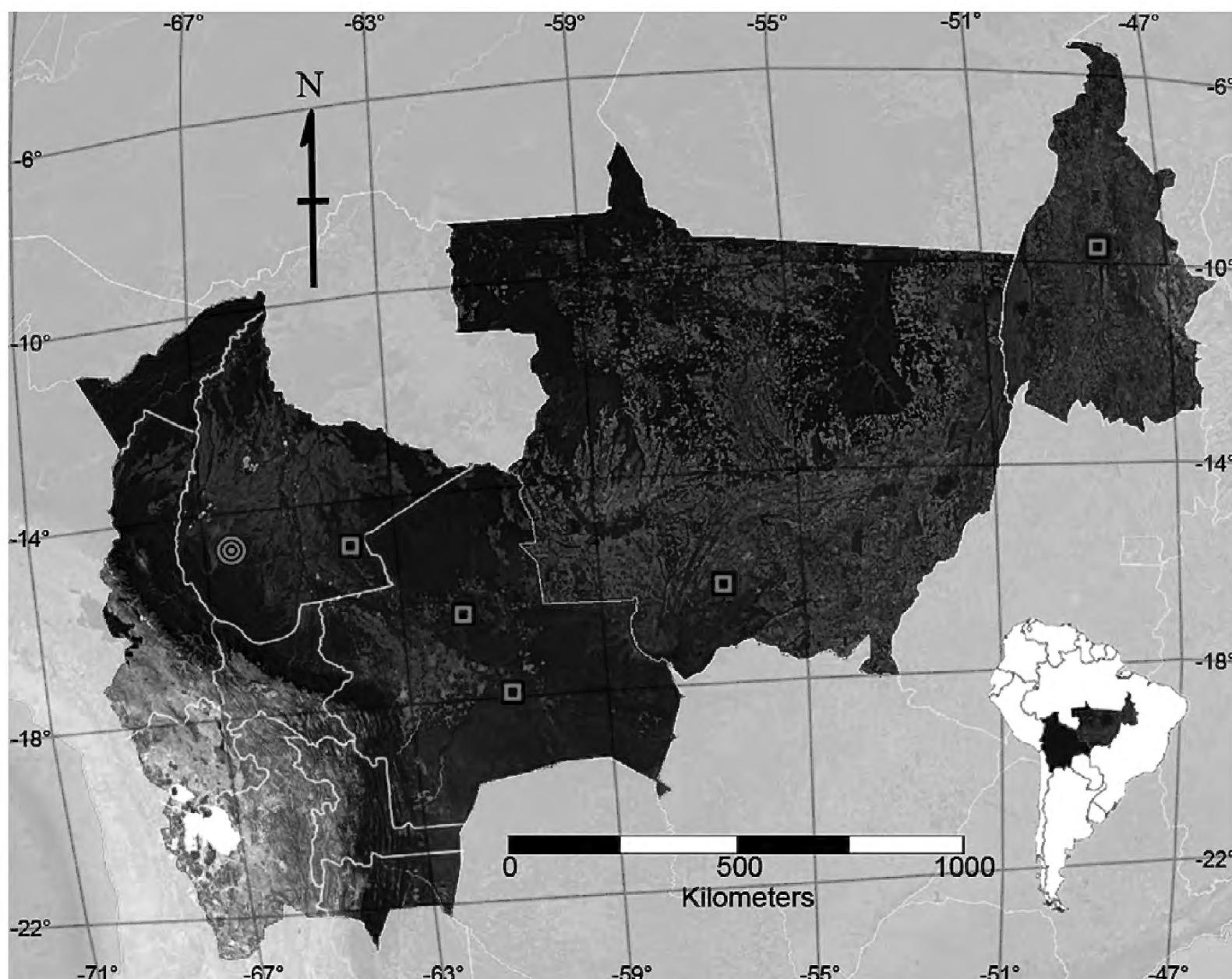


Figure 2. Distribution map of *Xenopholis werdingorum*. The new record presented in this study is indicated by a red circle and previous locations are indicated by blue squares.

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